

REMARKS

Claims 1-34 remain pending in this application. Claims 20-26 have been amended. Therefore, claims 1-34 are pending in the present application.

The Examiner objected to the drawings, requiring labels for various reference characters in Figures 1-4. In response to the Examiner's objections, labels have been added to Figure 1-4 to address the Examiner's concerns. A proposed drawing correction is provided herein. Applicants respectfully assert that no new matter has been added as a result of the amendments to the drawings

The Examiner objected to the specification based upon informalities, such as size of the page header. Appropriate corrections to the specification have been made to adjust informalities, such as the size of the page header. Applicants respectfully assert that no new matter has been added to the specification as a result of the changes regarding the informalities.

The Examiner rejected claims 1-4, 8, 10-12, and 16 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,075,790 ("*Lincoln*"). Applicants respectfully traverse this rejection.

Applicants respectfully assert that *Lincoln* does not disclose, suggest or make obvious all of the elements of claim 1 of the present invention. *Lincoln* provides a status queue, wherein the status queue is associated with a plurality of buffers on the host side of a PCI bus. See column 6, lines 17-28. *Lincoln* also discloses a control queue 131 on the other side of the PCI bus. The Examiner cites step 200 in Figure 7 and step 340 in Figure 9 to teach, suggest, or make obvious

the element of determining whether an asynchronous transfer mode (ATM) cell in a client is ready to be transferred over the PCI bus to a storage device within the host, as called for by claim 1 of the present invention. However, step 200 discloses whether an indication is provided that the host has to write an entry into the control queue in the control memory, which does not disclose or make obvious the step of determining whether the ATM cell in said client is ready to be transferred over the bus to a storage device. See column 8, lines 58-61.

At step 340 in Figure 9 of *Lincoln*, the “SAR” subsystem checks to see whether the subsystem needs to write to the status queue 132. The subsystem checks to see if the status queue is full, as shown in step 342 of Figure 9. See column 10, lines 38-42. However, these steps do not disclose or make obvious the step of determining whether the ATM cell in the client is ready to be transferred over said bus to a storage device. As stated by the Examiner, it is not clear from *Lincoln* whether the full bit is set at the host or at the SAR 29, and the mere fact that *Lincoln* discloses that the image read and write pointers are used to determine if a buffer is full does not make up for this deficit.

Additionally, *Lincoln* does not disclose preventing overflow of the storage device by calculating a first available cell space in the storage device as a function of a write value, a read value image and a size value of the storage device. The Examiner stated that the step of preventing overflow is at least taught by the step 204 in Figure 7 or steps 342 and 346 in Figure 9. Applicants respectfully disagree. Step 204 in Figure 7 refers to the current position of the host in the control queue 131 in the control memory 38, which is incremented by an integer. Likewise, the step 342 of Figure 9 discloses an internal full bit set determination to check if the

status queue is full, not to calculate the available cell space as called for by claim 1 of the present invention. See column 10, lines 38-42.

Regarding step 346 of Figure 9, the increment position of the pointer in the status queue 132 is compared with the last known host position in the status queue as seen by the SAR subsystem 29, which still does not disclose preventing overflow based upon calculation of the first available cell space in the storage device. Therefore, the steps cited by the Examiner (*e.g.*, steps 204, 342, 346) do not disclose, suggest or make obvious the step of preventing overflow of the storage device by calculating a first available subspace as called for by claim 1 of the present invention.

Additionally, the Examiner states that it may not be clear from the reference that using size value as a function of preventing overflow is disclosed. The Examiner states that it would have been obvious to one skilled in the art to use the size value for computing overflow. To support such an assertion, the Examiner notes that *Lincoln* provides a size of a payload. Applicants respectfully disagree. *Lincoln* does not disclose or make obvious the step of preventing overflow by calculating the first available cell space as a function of size value relating to an ATM set. In fact, *Lincoln* does not disclose or make obvious the step of preventing overflow at all when transferring data. *Lincoln* merely updates the control queue or the status queue in proceeding with transfer of data, wherein claim 1 of the present invention calls for preventing overflow by calculating cell space as a function of write value, read value image and a size value. This step is not made obvious by the disclosure of *Lincoln*. Therefore, claim 1 of the present invention is not suggested, disclosed or made obvious by *Lincoln*. For at

least the similar reasons cited above, claim 10, which also calls for preventing overflow based upon available cell space in a storage device as a function of write value, read value image and size value, is also allowable.

Independent claims 1 and 10 are allowable for at least the reasons cited above. Additionally, dependent claims 2-9 and 11-18, which depend from independent claims 1 and 10, respectively, are also allowable for at least the reasons cited above.

The Examiner rejected claims 5-7, 9, 13-15, 17, 18, and 19-34 under 35 U.S.C. § 103(a) as being unpatentable over Lincoln in view of U.S. Patent No. 6,115,761 ("**Daniel**"). Applicants respectfully traverses this rejection.

As stated by the Examiner, **Lincoln** does not disclose the write value image called for by claims 5-6 and 14-16 of the present invention. However, the Examiner states that it would have been obvious for one skilled in the art to use the image of the write pointer in order to avoid underflow. The Examiner then cites **Daniel**, which discloses a write pointer. However, as described above, all of the elements of claim 1 are not disclosed, suggested or made obvious by the disclosure of **Lincoln** and adding **Daniel** to the disclosure of **Lincoln** would not provide or make up for the deficit of **Lincoln**. In other words, adding the disclosure of write pointers disclosed by **Daniel** would not make up for the deficit of **Lincoln**, for example, preventing overflow as called for by claim 1 of the present invention and claim 10, from which claims 4-5 and 14-15 respectively depend. **Daniel** generally deals with a FIFO operation between a reader module and a writer module. **Daniel** deals with a plurality of consecutive FIFO operations. In contrast, **Lincoln** generally deals with ATM transfer of data and the combination of **Lincoln** and

Daniel do not disclose the subject matter called for by the claimed invention. Additionally, claims 9, 13-15, 17, 18 are also not made obvious by *Lincoln*, *Daniel*, or their combination for at least the reasons cited above.

Furthermore, claims 19 and 27 call for a system and an apparatus, which include apparatus for preventing overflow by calculating a first available cell space and a second available cell space. Claims 19 and 27 also call for apparatus for determining the cell space as a function of write value, read value image and size value, which as described above are not disclosed, taught or made obvious by *Lincoln* or the combination of *Lincoln* and *Daniel*. Therefore, claims 19 and 27 are allowable.

Furthermore, Applicants respectfully assert that those skilled in the art would not be motivated to combine the ATM disclosure of *Lincoln* with the FIFO operation disclosure of *Daniel* without improper hindsight. The Examiner provides no motivation to combine *Lincoln* and *Daniel* in order to make obvious any claim of the present invention. However, as described above, even if *Daniel* and *Lincoln* were combined, all of the elements of any of the claims of the present invention would not be taught, disclosed, suggested, or made obvious. Therefore, claims 5-7, 9, 13-15, 17, 18, and 19-34, of the present invention are allowable.

Independent claims 1, 10, 19, and 27 are allowable for at least the reasons cited above. Additionally, dependent claims 2-9, 11-18, 20-26, and 28-34, which depend from independent claims, 10, 19, and 27, respectively, are also allowable for at least the reasons cited above.

In light of the arguments presented above, Applicants respectfully assert that claims 1-34 are allowable. In light of the arguments presented above, a Notice of Allowance is respectfully solicited.


If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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